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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
JOO, JOSHUA	

ART UNIT	PAPER NUMBER
2154	

DATE MAILED: 09/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/990,567	JUNG, TAE-SUNG	
	Examiner	Art Unit	
	Joshua Joo	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Office Action filed on 7/5/2005

1. Claims 1-10 are presented for examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gustafsson et al, "Mobile IP Regional Registration" published in July 13, 2000 from the Applicant's Information Disclosure Statement (Gustafsson hereinafter), in view of Barnes et al, US Patent #6,711,147 (Barnes hereinafter).

4. As per claim 1, Gustafsson teaches substantially the invention as claimed including the method for using Mobile IP where a mobile node registers with its home agent through a hierarchy of foreign agents. Gustafsson's teachings comprise of:

transmitting a location registration request from the mobile node to the first foreign agent (FA) (Pg. 25. The mobile node sends a registration request to the closest FA.), upon receiving an Agent Advertisement message with an address of the second FA and information indicating that the first GGSN supports a foreign agent function, said information and said Agent Advertisement message being transmitted by the first GGSN (Pg. 7, Section 3.3. FA announces its presence through an Agent Advertisement message to the mobile node, where if the "I' bit is set, it contains the address of the Gateway Foreign Agent (GFA)),

transmitting the location registration request from the first FA to the second FA (Pg 26. The FA sends the registration request to the GFA),

registering by the second FA an address of the first FA to which the mobile node belongs, and then transmitting to the home agent a Location Information message indicating the address of the first FA to which the mobile node belongs (Pg 26. The GFA maintains a list entry of the address of the lower level FA. Page 8, Home registration request contains a care-of address. Pg. 3. The care-of address is the address assigned to a mobile node or to agent that offers connectivity to the mobile node. Pg 27. If there is only one level of hierarchy beneath the GFA, then the address of the FA is the care-of address. Pg 26. Registration request is send to the home agent.)

5. Gustafsson teaches the use of foreign agents and gateway foreign agents in a Mobile IP network. However, Gustafsson does not teach that the nodes supporting the functions of claim 1 and the functions of foreign agents and the gateway foreign agents are specifically GGSNs, Gateway GPRS Support Node.

6. Barnes teaches of implementing GGSN, that provide functionality similar to a gateway, in a GPRS network (Col 2, lines 45-53).

7. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the teachings of Gustafsson with the teachings of Barnes because the teachings of Barnes to use GGSN in the GPRS network would improve the capability of Gustafsson's teachings by providing packet based service which would allow the network to be compatible with the Internet.

8. As per claim 2, Gustafsson teaches the method as claimed in claim 1, wherein the location registration request transmitted by the mobile node includes the address of the first GGSN to which the mobile node belongs. (Pg. 9. The mobile node sends a registration request to the foreign agent and the care-of address may contain the address of the foreign agent.)

9. As per claim 3, Gustafsson teaches the method as claimed in claim 1, wherein the Agent Advertisement message is transmitted through a tunnel between the mobile node and first GGSN (Pg. 7, Section 3.3. FA sends an Agent Advertisement message, where the message indicates the domain supports tunnel management).

10. As per claim 4, Gustafsson teaches the method as claimed in claim 1, further comprising the steps of:

determining by the home agent whether a destination address of data received from the correspondent node is identical to the address of the second GGSN, upon receiving data destined for the mobile node from the correspondent node (Pg. 8, Section 3.4.1. The mobile node might set the care-of address as the GFA address in the registration request. If the care-of address is the GFA address, the home agent will then register the GFA address as the address of the mobile node. Pg. 29, Section B.3. When data is sent to the mobile node, the data arrives at the home agent, and home agent tunnels the traffic to the GFA.)

transmitting the data to the second GGSN, if the destination address of the data is identical to the address of the second GGSN (Pg. 8, Section 3.4.1. The mobile node may use the GFA address as its care-of address and send information directly to the GFA without using a FA. Pg. 26-27. The home agent sends a registration reply to the GFA.)

11. As per claim 5, Gustafsson teaches the method as claimed in claim 4, further comprising the step of transmitting the data to the first GGSN from the home agent, if the destination address of the data is not identical to the address of the second GGSN. (Pg. 9, Section 3.4.2. If the care-of address of the registration request is not the GFA and is the address of the FA, the FA sends the message directly to the home agent. Also, if the care-of address is zero, the FA adds an extension with its own address and sends the request to the GFA. Pg. 26. The GFA stores the address of the FA. When the home agent sends the registration reply to the GFA, the GFA checks its record and sends it to the FA. Pg. 7, Section 3.3. The Advertisement message send by the FA can indicate tunneling).

12. As per claim 6, Gustafsson teaches the method as claimed in claim 1, wherein the Location Information message includes the address of the first GGSN and the address of the second GGSN (Pg. 9-10. Section 3.4.2. The registration request contains the address of the GFA and the address of the FA.)

13. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gustafsson, in view of Madour et al, US Patent #6,904,025 (Madour hereinafter) and Helander et al, US Patent #6,735,187 (Helander hereinafter).

14. As per claim 7, Gustafsson teaches substantially the invention as claimed including the method for using Mobile IP where a mobile node registers with its home agent through a hierarchy of foreign agents. Gustafsson's teachings comprise of:

receiving through the tunnel an Agent Advertisement message indicating whether a second foreign agent (FA) serves as the foreign agent or the gateway foreign agent, if the

mobile node enters a region of the second FA (Pg. 12, Section 3.5. Mobile node moves from one foreign agent to another foreign agent. Mobile node receives an Agent advertisement message from the new foreign agent, which indicates whether the advertised GFA is the same as the previously registered care-of address or a newly advertised FA. Pg. 7, Section 3.3. FA sends an Agent Advertisement message, where the message indicates the domain supports tunnel management).

transmitting a first registration request message for requesting location registration from the mobile node to the second FA, if the second FA serves as the foreign agent (Pg. 12, Section 3.5. Mobile node issues a regional registration request to the new foreign agent).

transmitting a second registration request message for requesting the location registration for the mobile node from the second FA to the first FA, if the first FA serves as the gateway foreign agent (Pg. 12, Section 3.5. The new FA sends the regional registration request to the to the GFA. GFA updates mobile node in its visitor list and sends a regional registration reply.)

transmitting a Location Information message indicating location information of the mobile node from the first FA to the home agent, upon receiving the second registration request message. (Pg. 9-10. Section 3.4.2. The registration request on the mobile node contains the address of the GFA. Pg. 26. The registration request is send to the home agent.)

15. Gustafsson teaches the use of foreign agents and gateway foreign agents in a Mobile IP network. However, Gustafsson does not teach that the foreign agent and the gateway foreign agent are specifically GGSNs, Gateway GPRS Support Node.

16. Madour teaches of a GGSN that incorporates the functionality of a FA (Col 7, lines 4-5, 34-35. FA component of GGSN; FA in the GGSN).

17. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the teachings of Gustafsson with the teachings of Madour because the teachings of Madour to implement a FA within a GGSN would improve the capability of Gustafsson by allowing the GGSN to perform the functions of a FA and providing packet based service which would allow the network to be compatible with the Internet. In addition, GGSN would provide a communication link between a cellular network and IP network and interworking with packet data networks.

18. Gustafsson teaches that the foreign agent sends an indication of whether the domain supports tunnel management (Page 12, section 3.3). However, Gustafsson does not teach of creating by the mobile node a GTP (GPRS Tunneling Protocol) tunnel and receiving through the created GTP tunnel.

19. Helander teaches in the "Background" of communicating through GTP tunneling, where the tunnel runs from a GGSN to a tunnel device (Col 2, lines 6-15).

20. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Gustafsson, Madour, and Helander because the teachings of Helander to provide GTP tunneling for communication would improve the system of Gustafsson and Madour by providing a secure path between a packet data network and the mobile station in the GPRS network.

21. As per claim 8, Gustafsson teaches the method as claimed in claim 7, wherein the Location Information message includes an IP address of the first GGSN and an IP address of

the second GGSN. (Pg. 9-10. Section 3.4.2. The registration request contains the address of the GFA and the address of the FA.)

22. As per claim 9, Gustafsson teaches the method as claimed in claim 7, further comprising the steps of:

transmitting the Location Information message indicating the location information of the mobile node from the second GGSN to the home agent, upon receiving the first registration request message (Pg 26. Upon receiving a Registration request from the GA, the GFA sends a Registration request is send to the home agent. Pg. 8, Section 3.4.1. Registration request contains the care-of address of the mobile node).

23. As per claim 10, the method as claimed in claim 7, further comprising the step of, upon receiving data destined for the mobile node from the correspondent node after receiving the Location Information message, transmitting the received data from the home agent to the second GGSN to which the mobile node is currently connected (Pg. 26. The home agent receives the registration request. Pg. 27. Home agent responds by sending the registration reply to the GFA. Pg. 9-10. Section 3.4.2. The registration request on the mobile node contains the address of the GFA.)

Response to Arguments

24. Applicant's arguments filed 7/5/2005 have been fully considered but they are not persuasive. Applicant argued that (1) Gustafsson does not disclose "transmitting a location registration request from the mobile node to the first GGSN, upon receiving an Agent Advertisement message with an address of the second GGSN and information indicating that

the first GGSN supports a foreign agent function, said Agent Advertisement message being transmitted by the first GGSN as recited in claim 1; and (2) There would be no reason for Gustafsson to teach a GGSN supports a foreign function because as taught by Gustafsson, all foreign agents are only foreign agents.

Examiner traverses the arguments:

25. As to point (1), Gustafsson teaches:

i) Page 25, "If a foreign agent advertises the entire hierarchy between itself and the GFA, the Registration Request messages must be delivered to each RFA address in turn within that hierarchy. When newly arriving at a visited domain, the mobile node sends a Registration Request, which the care-of address set to the GFA address announced in the Agent Advertisement."

ii) Page 12, Section 3.5, "Suppose the mobile node moves from one foreign agent to another foreign agent within the same visited domain. It will then receive an Agent Advertisement from the new foreign agent."

26. Therefore, from section (i), Gustafsson teaches that the Agent Advertisement message contains a GFA address. The mobile node in response to the Agent Advertisement message transmits a Registration request. From sections (i) and (ii), Gustafsson teaches of foreign agents transmitting Agent Advertisement messages to the mobile node, which would indicate to the mobile node that the advertising nodes are foreign agents, thus support foreign agent functions.

27. Gustaffson does not specifically teach of a second GGSN, while Gustafsson does teach of a GFA. The only difference between the teachings of Gustafsson and claims 1 and 7 of the instant application is that Gustafsson teaches that foreign agents and gateway foreign agents (GFA) perform the functions of claim 1 and 7, while Applicant claims that GGSN performs the functions of claims 1 and 7. For example, Gustaffson does not specifically teach of a second GGSN, where the advertisement message contains the address of the second GGSN. However, Gustafsson does teach of a GFA, where the advertisement message contains the address of the GFA.

28. In the specification of the instant application, the specification states that a GGSN may serve as a GFA.

> iii) Page 13, lines 5-7, "Registration Request message transmitted in the step 601 includes an address of the GGSN serving as the gateway foreign agent."
>
> iv) Page 13, lines 7-9, "In reply to a registration request from the mobile node 50, the GGSN 60 transmits the Registration Request message to the GGSN 65 serving as the gateway foreign agent."

29. Therefore, the GGSN in the instant application can be considered as a GFA. Gustaffson and the instant application are similar in that they both teach of FA that transmit advertisement messages, and the difference between Gustafsson and the instant application is that Gustafsson does not specifically state of a GGSN. Since Gustafsson does not teach of a GGSN, Gustaffson was combined with Barnes for claim 1, and combined with Madour with claim 7. See paragraphs 6-7, 16-17.

30. As to point (2), in the specification of the instant application,

v) Claim 1, "receiving an Agent Advertisement message with... ...information indicating that the first GGSN supports a foreign agent function"

vi) Page 12, line 27, "GGSN 60 serving as a new foreign agent"

31. Applicant states that the GGSN supports the functions of a foreign agent function. Therefore, the examiner interprets that the GGSN itself maybe a foreign agent since the GGSN is performing the actions of a foreign agent. As to sections (i) and (ii), Gustaffson teaches that the mobile node receives an Agent Advertisement which would indicate the node is an FA, thereby supporting the functions of a FA.

32. Gustafsson and the instant application are similar in that they both teach that nodes supports the functions of FAs. The difference between Gustafsson and instant application is that Gustafsson does not specifically state that a GGSN performs the functions of claims 1 and 7. Since Gustafsson does not teach of a GGSN, claim 1 was rejected Gustafsson in view of Barnes which taught that GGSNs may be implemented in a mobile IP network. Claim 7 was rejected Gustafsson in view of Madour and Helander, where Madour also taught GGSNs may be in implemented in a mobile IP and further taught that the GGSN may incorporate FAs. Even thought Applicant argues that there would be no reason for Gustaffson to teach GGSN, it would be beneficial for Gustaffson's teachings to include GGSN because GGSN would improve Gustaffson's teachings by providing a communication link between a cellular network and IP network and interworking with packet data networks.

Conclusion

33. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

34. The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

i) Bjelland et al, US Publication #2002/0034935, teaches of a mobile station sending a request and forming a GTP tunnel.

35. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

36. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua Joo whose telephone number is 571 272-3966. The examiner can normally be reached on Monday to Friday 7 to 4.

37. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A. Follansbee can be reached on 571 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

38. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

September 14, 2005
JJ